UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

CHIESI USA, INC., et al., Plaintiffs, v. SANDOZ INC., et al., Defendants.	Civil No. 13-5723 (NLH/AMD) **MARKMAN OPINION**

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HILLMAN, District Judge

I. Introduction

Presently before the Court in this Hatch-Waxman Act[1] action is the dispute over the construction of claims in four patents relating to Cardene® I.V. Premixed Injection, which is a pre-mixed ready-to-use nicardipine hydrochloride drug product that is used for the treatment of cardiovascular and cerebrovascular disorders. Plaintiffs Chiesi USA, Inc., Cornerstone BioPharma, Inc., and EKR Therapeutics, LLC ("Chiesi") are the holders of

[1] The Third Circuit Court of Appeals recently explained,

> With the Drug Price Competition and Patent Term Restoration Act of 1984, Pub. L. No. 98–417, 98 Stat. 1585, commonly known as the Hatch–Waxman Act, Congress attempted to balance the goal of "mak[ing] available more low cost generic drugs," H.R. Rep. No. 98–857, pt. 1, at 14–15 (1984), reprinted in 1984 U.S.C.C.A.N. 2647, 2647–48, with the value of patent monopolies in incentivizing beneficial pharmaceutical advancement, see H.R.Rep. No. 98–857, pt. 2, at 30 (1984), reprinted in 1984 U.S.C.C.A.N. 2686, 2714. The Act seeks to accomplish this purpose, in part, by encouraging "manufacturers of generic drugs . . . to challenge weak or invalid patents on brand name drugs so consumers can enjoy lower drug prices." S. Rep. No. 107–167, at 4 (2002).

King Drug Co. of Florence, Inc. v. Smithkline Beecham Corp., 791 F.3d 388, 394 (3d Cir. 2015).

U.S. Patent Nos. 7,612,102 ("the '102 patent"), 7,659,290 ("the '290 patent"), 7,659,291 ("the '291 patent"), and 8,455,524 ("the '524 patent"), and they have filed a patent infringement suit against defendants Sandoz Inc., Sandoz AG, and ACS Dobfar Info SA ("Sandoz") arising from Sandoz's filing of an Abbreviated New Drug Application ("ANDA") seeking FDA approval to market generic versions of Chiesi's Cardene® I.V. Premixed Injection.[2]

A two-day claim construction hearing was held on May 12 and 13, 2015, at which the Court heard testimony from two experts on behalf of Chiesi - Alexander M. Klibanov, Ph.D. and Benny D. Freeman, Ph.D., P.E. – and one expert on behalf of Sandoz – Michael B. Maurin, R.Ph., Ph.D. - in addition to presentations by the parties' attorneys.

Following the conclusion of the parties' arguments and the testimony and cross-examination of the expert witnesses, the Court provided preliminary findings with regard to the construction of the patent claims at issue. The Court permitted the parties to submit supplemental briefing, and on June 30, 2015, the Court, having considered the entire record and additional briefing and argument by counsel, issued an oral

[2] This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331, 1338(a), 2201, 2202 and 35 U.S.C. § 271.

Opinion on the Court's final construction of the patent claims. This Opinion formally memorializes the Court's findings as to its construction of the patent claims at issue pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996).

II. Legal Standard for Claim Construction

The ultimate question of the proper construction of a claim in a patent is a question of law for the court to determine. Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 837 (2015) (citing Markman v. Westview Instruments, Inc., 517 U.S. 370, 388-91 (1996)) (further explaining, "While we held in Markman that the ultimate issue of the proper construction of a claim should be treated as a question of law, we also recognized that in patent construction, subsidiary factfinding is sometimes necessary."). A patent claim is that "'portion of the patent document that defines the scope of the patentee's rights.'" Id. (quoting Markman, 517 U.S. at 372).

The Federal Circuit has set forth a "familiar approach to claim construction." In re Papst Licensing Digital Camera Patent Litigation, 778 F.3d 1255, 1261 (Fed. Cir. 2015). In construing a patent claim, which should be considered in the mindset of a person having ordinary skill in the art ("POSA"):

> (1) a court should give words of a claim their ordinary meaning in the context of the claim and the whole

patent document;

(2) the specification particularly, but also the prosecution history, informs the determination of claim meaning in context, including by resolving ambiguities;

(3) even if the meaning is plain on the face of the claim language, the patentee can, by acting with sufficient clarity, disclaim such a plain meaning or prescribe a special definition; and

(4) the court should apply the principle that "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction."

In re Papst, 778 F.3d at 1261 (citing Phillips v. AWH Corp., 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc)) (explaining that claim terms should be given their ordinary and customary meaning to a person having ordinary skill in the art at the time of the effective date of the patent application). Although intrinsic evidence is important in claim construction, district courts may also rely upon extrinsic evidence, which "'consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.'" Phillips, 415 F.3d at 1317 (quoting Markman, 52 F.3d at 980).

III. Discussion

Although there are four patents-in-suit, the '102 patent contains the majority of disputed claim terms, most of which are also contained in the other three patents. The '102 patent provides, in relevant part,

> What is claimed is:
>
> 1. A pharmaceutical composition for parenteral administration comprising a pre-mixed aqueous solution with a pH from about 3.6 to about 4.7 comprising:
>
> from about 0.1 to 0.4 mg/mL nicardipine hydrochloride; a tonicity agent selected from (i) about 4.5% to about 5% dextrose or (ii) about 0.8% to about 0.9% sodium chloride; a buffer in an amount to maintain pH from about 3.6 to about 4.7;
>
> the aqueous solution contained in a pharmaceutically acceptable container such that the solution does not come into contact with polar polymers;
>
> the aqueous solution when stored in the container for at least one year at room temperature exhibiting (i) less than a 10% decrease in the concentration of nicardipine hydrochloride and (ii) a total impurity formation of less than about 3%.

(Docket No. 1-1 at 22.)

The disputed claim terms[3] at issue in this case are:

1. "pre-mixed aqueous solution" (in the '102, '290, '291, '524 patents)

[3] The parties also dispute the term "a total impurity formation" (in '102, '290, '291, '524 patents). The parties agree that the term means the percent weight-by-weight (% w/w) formation of nicardipine-related impurities, where the numerator is the weight of nicardipine-related impurities formed. The parties disagree as to the proper calculation of the denominator. The parties have agreed, however, that the weight to be used in the denominator can be addressed during the liability phase, and, therefore, the Court does not have to construe this claim term at this time.

2. “pre-mixed composition” (in the ‘290 patent)
3. “a pharmaceutically acceptable container” (in the ‘102, ‘290, ‘291, ‘524 patents)
4. “container” (in the ‘102, ‘290, ‘291, ‘524 patents)
5. “does not come into contact with polar polymers” (in the ‘102, ‘290, ‘291 patents)
6. “is in contact with non-polar polymers” (in the ‘524 patent)
7. “one year at room temperature” (in the ‘102, ‘290, ‘291, ‘524 patents)
8. “three months at room temperature” (in the ‘102, ‘291, ‘524 patents)

The Court will address each disputed claim term in turn, first presenting Chiesi’s and Sandoz’s claim construction, and then providing the Court’s construction of the claim term. In addition to the concise explanation of the Court’s construction of the disputed claim terms contained in this written Opinion, the Court’s findings are further detailed during the three in-person hearings.

1. "pre-mixed aqueous solution"/ "pre-mixed composition"

Claim Term	Chiesi's Proposed Construction	Sandoz's Proposed Construction
pre-mixed aqueous solution	a ready-to-use pharmaceutical composition that is an aqueous solution already mixed from the point of manufacture and is stable, allows medical personnel to use prepared containers containing an injectable formulation off the shelf without additional preparation, avoids potential contamination problems, and eliminates dosage errors	an aqueous solution that is mixed and ready to use prior to its point-of-care administration
pre-mixed composition		a composition that is mixed and ready to use prior to its point-of-care administration

The Court finds that these claim terms mean:

"a ready-to-use pharmaceutical composition that is an aqueous solution already mixed from the point of manufacture and is stable, allows medical personnel to use prepared containers containing an injectable formulation off the shelf without additional preparation"

Sandoz has accepted the first part of the construction of these terms: "ready-to-use pharmaceutical composition that is an aqueous solution already mixed from the point of manufacture." The remainder of the Court's construction is supported by the teachings of the patent and the plain meaning of the patent terms.

The stability of the solution is the hallmark of the specific formulation and the appropriate container. The stability of the solution also informs the inclusion of the

phrase "allows medical personnel to use prepared containers containing an injectable formulation off the shelf without additional preparation" because it must be read in tandem with the claim term "parental administration," which requires the pre-mixed solution to be appropriate for off-the-shelf injection into patients.

The Court rejects "avoids potential contamination problems, and eliminates dosage errors" as advocated by Chiesi. There is nothing in the claim itself that speaks of contamination or dosage errors, and this additional language is merely the intended benefit that may have inspired the patentee.

2. "a pharmaceutically acceptable container"/"container"

Claim Term	Chiesi's Proposed Construction	Sandoz's Proposed Construction
a pharmaceutically acceptable container	a container for drug storage and direct administration to patients	a container acceptable for pharmaceutical use
container		This term does not require construction and should be accorded its plain and ordinary meaning in the art. Should the court require a construction, the term "container" means an object suitable for containing a liquid.

The Court finds that these claim terms mean:

"a container for drug storage and administration to patients without additional preparation of the stored solution"

The Court rejects that these terms are limited to their plain meaning, or that a "container" is simply an object suitable for containing liquid. The container must be "pharmaceutically acceptable" because it is specifically described as such in the patents' claims, and because this term encompasses the whole purpose of the patents. The Court also rejects the addition of the term "direct" to the "administration to patients" phrase because the patents did not intend for the container to be literally attached to a patient's body.

The Court's addition of the phrase "without additional preparation of the stored solution" encapsulates the claim's essence of a pre-mixed solution ready to be used off-the-shelf. Even though the container, such as an IV bag, is not directly attached to a patient's arm and requires the use of tubing, ports, and other accessories, to administer the drug, the container itself must be one that does not require additional efforts to ready the solution inside of it. This phrase accounts for the claim's requirement that the solution is for "parenteral administration," and it distinguishes it from, for example, an ampule, which is also a pharmaceutically acceptable container, but which in this case is used to hold a concentrated version of the drug which must be diluted or mixed before it can be administered to a patient.

3. "does not come into contact with polar polymers"/ "is in contact with non-polar polymers"

Claim Term	Chiesi's Proposed Construction	Sandoz's Proposed Construction
does not come into contact with polar polymers	does not contact polar polymers sufficiently to cause significant drug adsorption	has no contact with any polar polymers
is in contact with non-polar polymers	is in contact with non-polar polymers to minimize drug adsorption	has contact with non-polar polymers

The Court finds that these claim terms mean:

"does not come into contact with polar polymers" and "is in contact with non-polar polymers"

The Court does not agree that these phrases would be read by a person of ordinary skill in the art to include "to minimize drug adsorption." These terms mean what they say – that the solution inside a pharmaceutically acceptable container does not contact polar polymers at all, and that the solution inside a pharmaceutically acceptable container is in contact with only non-polar polymers. The plain meaning of these phrases, in addition to the teachings in the patent, do not support the notion that the solution inside a pharmaceutically acceptable container "can contact polar polymers a little bit as long as there is insignificant adsorption."[4] While the patent includes

[4] This finding also rejects the argument that "contact" means

embodiments in which some contact with polar polymers is described, the patent when read as whole informs this Court that the resulting and significant drug adsorption in those embodiments compels a limitation of the claim to one in which no contact with polar polymers would occur.

This construction of these terms also does not support the notion that the pharmaceutically acceptable container itself must not be comprised of poly polymers in every instance. The patent means what it says – the invention is a ready-to-use pharmaceutical composition that is an aqueous solution already mixed from the point of manufacture, is stable, allows medical personnel to use prepared containers containing an injectable formulation off the shelf without additional preparation, and that the solution does not come into contact with polar polymers, but does come in contact with non-polar polymers, when contained in a pharmaceutically acceptable container. Whether the bag or other container has polar polymers in it, is of no moment, so long as there is no contact between the polar polymers and the solution prior to administration.

"interact with," as the latter term suggests the amount of drug adsorption, which is beyond the ordinary meaning of "contact."

4. "one year at room temperature"/ "three months at room temperature"

Claim Term	Chiesi's Proposed Construction	Sandoz's Proposed Construction
one year [three months] at room temperature	one year [three months] full-term at room temperature	The terms "one year [three months] at room temperature" and the clause within which [each] appears is merely functional language that recites the benefit achieved when practicing the claim. These terms do not require construction and should be accorded its plain and ordinary meaning in the art, in the context of the entire clause within which it appears.

The Court finds that these claim terms mean:

"one year full-term at room temperature" and "three months full-term at room temperature"

A person of ordinary skill in the art would understand that a pre-mixed solution formulated for off-the-shelf use maintains its ready-to-use characteristic for its stated storage duration. The '102 patent claims that the solution exhibits a certain decrease in concentration and total impurity formation when "stored in the container for at least one year at room temperature." The POSA would understand that the stated decrease in concentration and total impurity formation is the same on day one and on day 365. Thus, the addition of "full-term" to the phrase "one year at room temperature" captures the meaning and purpose of the claim, and is more than functional

language that recites the benefit achieved when practicing the claim. This is also true for the three-month term.[5]

IV. CONCLUSION

In summary, the disputed claim terms in U.S. Patent Nos. 7,612,102 ("the '102 patent"), 7,659,290 ("the '290 patent"), 7,659,291 ("the '291 patent"), and 8,455,524 ("the '524 patent") are:

1. "pre-mixed aqueous solution" (in '102, '290, '291, '524 patents) / "pre-mixed composition" (in '290 patent)

The Court's construction:

"a ready-to-use pharmaceutical composition that is an aqueous solution already mixed from the point of manufacture and is stable, allows medical personnel to use prepared containers containing an injectable formulation off the shelf without additional preparation"

2. "a pharmaceutically acceptable container" (in '102, '290, '291, '524 patents) / "container" (in '102, '290, '291, '524 patents)

The Court's construction:

"a container for drug storage and administration to

[5] The issue argued at the hearings concerning accelerated data – i.e., whether the inventors determined that the solution would be self-stable for at least one year through the observation of the solution over the course of one year or through extrapolation from a shorter duration of observation – is not relevant to the Court's construction of this claim, and it is more appropriately considered in the context of Chiesi's infringement claims and Sandoz's invalidity defenses.

patients without additional preparation of the stored solution"

3. "does not come into contact with polar polymers" (in '102, '290, '291 patents) / "is in contact with non-polar polymers" (in '524 patent)

The Court's construction:

"does not come into contact with polar polymers" and "is in contact with non-polar polymers"

4. "one year at room temperature" (in '102, '290, '291, '524 patents) / "three months at room temperature" (in '102, '291, '524 patents)

The Court's construction:

"one year full-term at room temperature" and "three months full-term at room temperature"

An appropriate Order will be issued.

Date: February 18, 2016
At Camden, New Jersey

s/ Noel L. Hillman
NOEL L. HILLMAN, U.S.D.J.